

Serial No.: 10/775,054

# IN THE SPECIFICATION

Please replace paragraphs [0001] and [0002] with the following rewritten paragraphs:

[0001] This application claims the benefit of ~~priority to~~ U.S. Provisional Patent Application Serial No. 60/445,604, filed February 7, 2003, and entitled "Duobinary Automatic Bias Control Circuit[[]]," which is incorporated herein in its entirety.

## Background of the Invention

[0002] Mach-Zehnder modulators achieve amplitude modulation based upon the phase difference between two arms of Mach-Zehnder modulator being proportional to a difference in voltage signals applied to the two arms. The Mach-Zehnder structure allows for this phase modulation to be converted into amplitude modulation. When the input voltage signals are AC-coupled, a DC bias is required in order to set the operating point of the modulator. Due to physical processes in the modulator, the DC bias voltage required for proper operation is time-varying. In order to maintain the proper bias condition, a control circuit is needed that monitors the output of the modulator, and corrects for the time varying bias requirement. For On-Off Keying, such an Automatic Bias Control (ABC) circuit is well-known, and in use in many implementations (see, for example, "Using the Lithium Niobate Modulator: Electro-Optical and Mechanical Connections" *Lucent Technologies Application Note TN98-004LWP*, April 1998.) When advanced line codes are used (see for example commonly owned U.S. Patent Application Serial No. \_\_\_\_\_ [attorney docket number 2070/5] Publication No. US-2004-0247324-A1, filed on even date herewith, which is incorporated herein in its entirety), however, the conditions that permit the use of the conventional ABC circuit are not met, and a new, more sophisticated ABC circuit is needed.